Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently amended) A fuel distributor for a fuel nozzle in a gas turbine engine, the fuel distributor comprising:

a pair of concentric tubular bodies having a common central longitudinal axis each having an inlet end and a outlet end, the pair of concentric tubular bodies including an inner body and an outer body having respectively an outer body inner surface and an inner body outer surface adapted to be in scaling contact one with the other;

at least two helical fuel channels adapted to deliver fuel and defined in at least one of the inner and outer surfaces, each helical fuel channel defining several turns around the common central longitudinal axis, each helical fuel channel being in fluid communication with a fuel inlet located at the inlet end; and

a channel exit port for each helical fuel channel directed radially outward relative to the central longitudinal axis to provide radially outward fuel flow, the channel exit ports being located at the outlet end.

2. (Original) The fuel distributor according to claim 1, wherein the fuel nozzle provides a swirl to the fuel delivered through the helical fuel channels and exiting through the channel exit ports.

3. (Currently amended) The fuel distributor according to claim 1, further comprising an outer air passage at the outlet end disposed radially outward of the helical fuel channels and in direct flow communication therewith, and wherein the helical fuel channels are defined in the outer surface and the inner surface is an uninterrupted wall.

4. (Original) The fuel distributor according to claim 3, wherein the outlet end of at least the outer surface is frusto-conical and the channel exit ports are defined by the intersection of the helical fuel channels with the outer surface at the outlet end.

5. (Original) The fuel distributor according to claim 1, wherein the outer body and the inner body are press fit together.

6. (Original) The fuel distributor according to claim 4, wherein the inner and outer bodies define an annular swirl chamber at the outlet end with the frusto-conical surface forming one wall of the swirl chamber, and an annular filming lip is provided on the inner surface at the outlet end to define an annular exit slot for forming the fuel into a conical film.

7. (Original) The fuel distributor according to claim 1, wherein the inner tubular body is shrink-fit into the outer body.

8. (Original) The fuel distributor according to claim 1, wherein the inner tubular body further comprises an inner cylindrical passage adapted to deliver air from the inlet end to the outlet end.

9. (Original) The fuel distributor according to claim 1, wherein the outer body includes an annular disc having air swirl apertures.

10. (Original) The fuel distributor according to claim 1, wherein at least one channel has a depth varying along the length of the channel.

11. (Original) The fuel distributor according to claim 10, wherein the depth is varied in a continuous manner.

12. (Original) The fuel distributor according to claim 10, wherein the varying depth provides flow-balancing for the fuel nozzle in order to tune a flow resistance thereof.

13. (Original) The fuel distributor according to claim 1, wherein at least three helical fuel channels are provided.

14. (Original) The fuel distributor according to claim 13, wherein the helical fuel channels are helically parallel to one another.

15. (Currenlty amended) A fuel distributor for providing a fuel film within a combustion chamber of a combustor in a gas turbine engine, the fuel distributor comprising:

fuel inlet means for receiving the fuel;

fuel outlet means including a fuel filming means for directing the fuel radially outward; and

at least two spiral conduit means for delivering the fuel, the spiral conduit means being in fluid communication with the fuel inlet means and the fuel outlet means, the spiral conduit means defining a longitudinal axis and directing the fuel radially outward therefrom at the fuel outlet means.

16. (Original) The fuel distributor according to claim 15, wherein the fuel distributor provides a swirl to the fuel exiting the fuel outlet means.

17. (Original) The fuel distributor according to claim 15, wherein the spiral conduit means are provided by the cooperation of first and second cylindrical surfaces defined by first and second concentric bodies respectively, the first cylindrical surface including spiral groove means and the second cylindrical surface being a continuous wall.

18. (Original) The fuel distributor according to claim 17, wherein the first body is shrink-fitted into the second body such that the first and second cylindrical surfaces are in sealing contact.

19. (Original) The fuel distributor according to claim 17, wherein at least one of the first and second body further comprises passage means for delivering air to the combustion chamber.

20. (Withdrawn) A method of distributing fuel in a fuel nozzle of a combustor assembly of a gas turbine engine, the method comprising the steps of:

a) providing at least two helical channels in the fuel nozzle with a channel exit port in fluid communication with each helical channel;

b) providing a fuel inlet cavity in fluid communication with the helical channels;

c) flowing fuel in the fuel inlet cavity;

d) flowing fuel through the helical channels; and

e) flowing fuel through the channel exit ports.

21. (Withdrawn) The method according to claim 20, wherein in step e), the fuel flowing out of the channel exit ports has acquired a swirling motion.

22. (Withdrawn) The method according to claim 20, wherein in step a), the helical channels of the fuel distributor are provided by the cooperation of a first cylindrical surface with a second cylindrical surface, the first cylindrical surface including helical grooves and the second cylindrical surface being continuous.

23. (Withdrawn) The method according to claim 22, wherein the first cylindrical surface is an outer surface of a first body, the second surface is an inner surface of a second body, and in step a) the cooperation of the first and second surfaces is obtained by concentrically fitting the first body into the second body.

24. (Withdrawn) The method according to claim 23, wherein the first body is shrink-fit into the second body.

25. (Withdrawn) The method according to claim 23, wherein the second body includes an annular disc having air swirl apertures.

26. (Withdrawn) The method according to claim 20, wherein step a) further comprises sizing at least one helical fuel channel to obtain a desired fuel distribution among the helical fuel channels.

27. (Withdrawn) The method according to claim 20, wherein step a) further comprises sizing at least one helical fuel channel to obtain a desired nozzle flow resistance.

28. (Withdrawn) The method according to claim 20, wherein step a) further comprises selecting a length of the helical fuel channels in order to obtain a desired heat transfer during step d).

29. (Withdrawn) The method according to claim 20, wherein step a) further comprises sizing the helical fuel channels to provide a desired fuel pressure drop during step d).

30. (Withdrawn) The method according to claim 20, wherein step a) further comprises sizing the helical fuel channels to obtain a desired fuel velocity during step d).

31. (Withdrawn) A method of fabricating a fuel distributor adapted to swirl fuel in a combustor assembly of a gas turbine engine, the method comprising the steps of:

a) providing an elongated cylindrical member;

b) forming at least two helical grooves along an outer surface of the elongated cylindrical member;

c) forming one end of the elongated cylindrical member so as to produce a frustro-conical surface at the end, such that channel exit ports are created where the helical grooves intersect the frustro-conical surface; and

d) fitting the elongated cylindrical member into a tubular member such that the cooperation of a continuous inner surface of the tubular member with the outer surface having helical grooves forms independent helical channels adapted to communicate fuel.

32. (Withdrawn) The method according to claim 31, wherein in step a) the cylindrical member includes a cylindrical bore concentric therewith.

33. (Withdrawn) The method according to claim 31, wherein in step d) the elongated cylindrical member is shrink-fit into the tubular member.